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Factor Analysis of the Spiritual Well-Being Scale, and Clinical Utility with Hospitalized Psychiatric Patients

Eric L. Scott

Loyola University Chicago

LOYOLA UNIVERSITY CHICAGO

FACTOR ANALYSIS OF THE SPIRITUAL WELL-BEING SCALE, AND CLINICAL UTILITY WITH HOSPITALIZED PSYCHIATRIC PATIENTS

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ERIC L. SCOTT

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CHAPTER 1

INTRODUCTION

The Spiritual Well-Being Scale (SWBS), developed by Paloutzian and Ellison (1979) was originally designed to measure an aspect of people's quality of life, namely, spiritual well-being. The instrument was developed as part of the quality of life indicators movement during the 1970's. In response to work done by both Moberg (1978) and the National Coalition on Aging in 1975, the original test developers hypothesized spiritual well-being to consist of two distinct dimensions- religious well-being and existential well-being. The first has to do with an individual's relationship with God. The second pertains to the individual's sense of meaning and purpose in life. As a result of the two dimensional conceptualization of spiritual well-being, Paloutzian and Ellison (1979) developed a 20 item scale consisting of two subscales each of which measures one of the two dimensions in the above definition of spiritual well-being.

While the instrument has come into wide use since its development in the 1970's, some of its psychometric properties have been criticized. The scale has shown varying results in factor analytic studies (Ledbetter, Smith, Fischer, Vosler-Hunter & Chew, 1991; Paloutzian & Ellison, 1979). In the original factor analysis, Paloutzian and Ellison (1979) evidenced a complex 2 factor solution. However, when Ledbetter et al. (1991b) performed a confirmatory analysis on the scale, they failed to confirm the two factor

structure hypothesized by the instrument's authors.

Differences in scoring have occurred across various groups of individuals, including differences between individuals sampled from religious organizations and client and clinical groups. Most of the research with the scale has been done with individuals chosen from religious institutions. Few studies have examined clinical populations alone. When used with religious populations the scale has shown evidence of ceiling effects which are not evident in clinical samples including medical patients (Bufford, Paloutzian & Ellison, 1991; Ledbetter, Smith, Vosler-Hunter & Fischer, 1991). For this reason, Ledbetter et al. (1991b) and Bufford, Paloutzian & Ellison (1991) have argued for more psychometric study of the scale on clinical populations to see if the same factor complexity and ceiling effects occur. Though the scale continues to be used on clinical samples (Sivan, Fitchett, & Burton, 1996; Mickley, Soeken & Belcher, 1992; Ellis & Smith, 1991) there have been no further examinations of factor complexity or ceiling effects in clinical populations.

In addition, there have been some concerns raised regarding the validity of the scale with differing religious populations. In particular, individuals from evangelical Christian samples score higher on the scale than members of mainline denominations (Bufford, Paloutzian & Ellison, 1991). However, while noted, this aspect of the scale will not be addressed in this study.

This study will examine the psychometric properties of the SWBS in a clinical rather than religious sample to examine further the psychometric properties of the SWBS specifically in regards to ceiling effects and factor structure.

CHAPTER 2

LITERATURE REVIEW

In comparison to other psychological phenomenon, religion and spirituality have been relatively ignored in the empirical research literature (Gartner, Larson and Allen, 1991; Larson, Pattison, Blazer, Omran, & Kaplan, 1986; Levin and Vanderpool, 1991). This has occurred in spite of the fact that research has been conducted showing religion and spirituality to be important factors in people's lives aiding in psychological adjustment and health (Payne, Bergin, Bielema, and Jenkins, 1991). One of the first steps in investigating these relationships is to ensure that the measurement devices used to measure spirituality are valid and reliable. In addition, the scales used must be applicable to differing individuals across a variety of settings in order to generalize the results to larger populations.

The SWBS was designed to measure accurately the construct of spiritual health across individuals with varying religious backgrounds. Indeed, the SWBS has gained wide recognition and use since its development, with over 300 requests to use the scale in research and clinical practice by the end of the 1980's (Ellison & Smith, 1991). However, use of the scale since its development in the 1970's has called into question the assumption that it is useful to use with all populations (Bufford, Paloutzian & Ellison, 1991; Ledbetter

et al., 1991a, 1991b).

The SWBS was developed as a result of the social indicators movement in the 1960's and 1970's (Bufford, Paloutzian & Ellison, 1991). As part of this movement the U.S. government was trying to develop measures to ensure that the quality of life of U.S. citizens was improving. Objective measures such as suicide rates, crime, alcoholism, physical and mental health, and housing conditions from around the country were collected each year. The government hypothesized that these measures would give objective pictures of the quality of life people had in the United States. Paloutzian and Ellison (1979) sensed a need to develop a scale that measured not only the objective characteristics mentioned above but also the subjective aspects of people's lives. Noting that there had been only small amounts of research concentrating upon the spiritual and existential aspects of people's lives, the authors developed the Spiritual Well-Being Scale (Campise, Ellison, & Kinsman, 1979).

The original scale developers took their lead from the work of Moberg (1978) who hypothesized that there exists two dimensions to subjective spiritual well-being. The first is a vertical dimension consisting of a relationship with God. The second dimension represents a more horizontal relationship with others and one's sense of personal satisfaction and meaning in life (Ellison, 1983). Additionally, the authors relied upon a definition of spirituality from the National Interfaith Coalition on Aging (1975) which portrayed spirituality as involving good relationships with God, community, environment and self.

Although the scale was developed for use with religious populations and employed

a widely ecumenical definition of spirituality, the majority of studies which use it to measure spiritual health have found evangelical, protestant populations scoring the highest on the scale. Early evidence for this came in validation studies when the test developers found that Christian men and women claiming to be "Born Again" scored significantly higher than those claiming to follow only the moral teachings of Christianity (Paloutzian & Ellison, 1979). Participants from mainline denominations scored significantly lower on the SWBS than those from evangelical religious groups, indicating that particular groups score differently based upon their particular religious tradition (Ellison, 1983). More evidence that the scale comes from a particular Christian tradition is suggested by the inclusion of items which reflect an emphasis on a close relationship with God; e.g. item 7, "I have a personally meaningful relationship with God", item 17, "I feel most fulfilled when I'm in close communion with God", and finally item 19 which reads, "My relationship with God contributes to my sense of well-being" (Paloutzian & Ellison, 1979; Ellison & Paloutzian, 1982). These particular forms of religious expression are most commonly found in evangelical, protestant faith communities.

The above finding is not the only criticism raised about the scale by researchers and clinicians. There are two major concerns that investigators have raised with the SWBS which bear directly upon the ability of the scale to measure accurately spiritual health. One is ceiling effects in religious populations. The second is a variable factor structure which raises doubt about the validity of the scale.

In a study utilizing 17 samples ranging from evangelical Christians to non-religious, sociopathic convicts, Ledbetter et al. (1991a) has shown that the SWBS has

significant ceiling effects (negatively skewed) for 'highly religious' evangelical Christian samples and has difficulty measuring accurately those individuals scoring more than two standard deviations above the mean of 70. However, the scale can accurately measure four full standard deviations below the mean in most populations. These ceiling effects led Ledbetter et al. (1991a) to conclude that the scale may be more appropriately a measure of spiritual deficiency than spiritual health. Since ceiling effects attenuate the scores of individuals from particular religious institutions, Ledbetter et al. (1991a) argued that the scale may more effectively detect individuals having difficulty with their faith than show those that have 'high' or large quantities of faith. For those samples who were not identified as evangelical Christians or who were not identified as religious samples, e.g. medical outpatients (Sherman, 1987) and non-Christian sociopathic convicts (Agnor, 1988), scores on the SWBS approached normal distributions and ceiling effects were minimized though not absent (Bufford, Paloutzian & Ellison 1991; Ledbetter et al., 1991a).

A number of problems are raised in samples that are negatively skewed and do not form a normal distribution. First, it may not be possible to detect meaningful differences among those individuals scoring high on the SWBS (Bufford, Paloutzian & Ellison, 1991). Second, ceiling effects may artificially lower the correlation coefficients when the scale is correlated with other measures of spiritual health. Both Ledbetter et al. (1991a) and Bufford, Paloutzian & Ellison (1991) note that validity coefficients reported using negatively skewed scores may be lower than if they were recalculated on normally distributed samples. Third, in samples with highly skewed data the correlation coefficients

with other scales may be highly variable. If it is true that a sample is highly skewed less reliable results and conclusions may be obtained and the true relationship between spiritual health and other psychological dimensions may not be clearly obtained. Fourth, the rule of homoscedasticity (i.e. normal distribution) is violated in samples of evangelical Christians resulting in difficulty with procedures based on variance and item response such as regression analysis and factor analysis with these samples.

It is with factor analyses of the SWBS that a second major problem occurs. Bufford, Paloutzian & Ellison (1991) report that factor analytic studies using highly skewed data may result in variable factor solutions. This has occurred with the SWBS. The first exploratory factor analysis from the original validation studies (Paloutzian & Ellison, 1979) reported a three factor structure. In this study the ten religiously worded items which correspond to the oddly numbered items on the scale loaded onto factor one. This first factor tapped the religious well-being portion of the definition of spiritual well-being and was subsequently called the "Religious Well-Being" subscale. Some examples of the religiously worded items include: item 3, "I believe that God loves me and cares about me", item 7, "I have a personally meaningful relationship with God", #11, "I believe that God is concerned about my problems," and item 15, "My relationship with God helps me not to feel lonely." The second factor extracted consisted of item numbers 4, 12, 16, 18, & 20 and was labeled "Life Satisfaction." The third factor that was found was labeled "Life Direction" and was comprised of items 2, 6, 8, 10 and 14. Of the three factors found, only factors one and two, "Religious Well-Being" and "Life Satisfaction" had Eigenvalues larger than one. Because the third factor, "Life Direction" did not have an

Eigenvalue larger than one there were no statistical reasons for retaining the items. However, the authors cited theoretical consistency as the rationale for keeping items that did not load clearly onto factor one or two (Paloutzian & Ellison, 1979).

Two distinct subscales were created based upon this original study. The items which loaded onto factor one were named the Religious Well-Being subscale. The remaining items from factors two and three were combined to form the second subscale which was called the Existential Well-Being subscale.

One of the difficulties with retaining items that do not clearly load onto specific factors is that validity of the scale is compromised. Each factor retained in an instrument taps only one specific psychological construct and the items are said to be homogenous. Placing items into a factor without the statistical criterion of an Eigenvalue of one or more means that a factor is no longer homogenous and may be tapping more than one construct. This raises serious questions as to the construct validity of the instrument. This validity question then creates potential problems with scoring and interpreting the results of the scale. An additional problem with the original factor analytic solution is that Paloutzian and Ellison (1979) used Varimax rotation with subscales that were clearly correlated. A more appropriate statistic for use with non-orthogonal variables is an oblique rotation (Gorsuch, 1983).

In the most recent factor analytic study of the SWBS Ledbetter, Smith, Fischer, Vosler-Hunter & Chew (1991b) performed a total of four confirmatory factor analyses on two separate samples to test whether the data fit a one or two factor solution. First, a one factor solution was calculated on each of the two samples. Next, a two factor solution

was calculated on the same two samples. For both sets of analysis done separately on the two samples, the authors failed to confirm either the one factor or the two factor solution for the Spiritual Well-Being Scale. Based upon highly significant values for Chi-Square statistics ($p=.0001$) the authors concluded that there was not simply one or two factors influencing scores on the SWBS. The authors suggest that the factor structure of the scale is not clear because of the failure to confirm the hypothesized two factor model. The results of this analysis raises serious doubt that the scale is a two factor test and indicates that the SWBS may be tapping more than the two constructs Paloutzian and Ellison (1979) hypothesized. Difficulty in creating a two factor test in the original study by Paloutzian and Ellison (1979) and the inability to confirm the results in Ledbetter et al. (1991) leads to serious questions as to the structure of the SWBS.

In order to determine if scores from clinical samples are normally distributed the current study will use the SWBS with a psychiatric inpatient population and examine the scores on the scale for significant ceiling effects. In addition, because the original authors (Paloutzian & Ellison, 1979) used inappropriate statistical procedures to examine the factor structure of the SWBS and a later study attempting to replicate a two factor structure failed to confirm this hypothesis (Ledbetter et al., 1991b), an exploratory factor analysis using an oblique rotation of the factors will be performed to determine how many factors the test is measuring. These components of the SWBS have never been examined with a pychiatric inpatient sample. Specifically, this study will attempt to answer the following questions: (1) Are there significant ceiling effects for the SWBS in a psychiatric inpatient sample? (2) What does the factor solution for an exploratory factor analysis

show for a clinical sample?

CHAPTER 3

METHOD

Participants

Archival data were used from a study of 202 (141 women, 61 men) psychiatric inpatients hospitalized at a large, urban, tertiary care teaching medical center in the Midwest. Data collection consisted of a convenience sample of newly admitted patients to the psychiatric units of the hospital. Patients were initially approached to participate in the study within five days of admission and if their chart indicated admission for treatment of an affective disorder. The sample was comprised of 65% Caucasian/Anglo- American, 19% African- American, 6% Hispanic- American, 3% Native- American, 5% as other and 2% left this information blank. Forty percent of this sample was single, 37% of participants reported being married or with a permanent partner, 19% were separated or divorced, and 4% were widowed. Seventy-seven (38%) reported being Catholic, 24 (12%) Baptist, 14 (7%) were Jewish, 13 (6%) identified themselves as 'Christian', and 19 (9%) with no religious affiliation. Age of the participants ranged from 17 to 89 with a mean age of 42. Eighty-two percent of the sample was hospitalized with a primary diagnosis of major depression or bipolar disorder- depressed. The remaining 18% had a variety of primary diagnoses including obsessive compulsive disorder, panic disorder,

alcohol/chemical dependency, and schizoaffective disorder. Previous research has found no significant differences in scores on SWBS based upon patient diagnosis (Sivan, Fitchett, & Burton, 1996). For this reason the patients were collapsed into one group for analysis.

Materials

The subjects were asked to complete the Spiritual Well-Being Scale (Paloutzian & Ellison, 1979). The instrument consists of a 20 item self- report measure of spiritual health developed by Paloutzian and Ellison (1979) which utilizes a 6-point multi-step scale ranging from 'strongly agree' to 'strongly disagree.' Reliability estimates for the scale including test-retest reliability at .85 have been reported (Ellison, 1983). Internal consistency has been estimated at .84 (Brinkman, 1989). Clear instructions for completing the instrument are printed at the top of the SWBS. The SWBS was left with subjects to complete and was collected when they had finished completing the scale.

Data Analysis

In order to test for possible ceiling effects, the mean of the SWBS for the sample will be calculated. The obtained mean will then be compared to the expected mean (i.e. mean near the midpoint of the SWBS). The mean and standard deviation of the sample scores will be calculated along with the median and the range. Upper and lower limit SWBS T-scores will also be calculated for the sample in order to give a measure of the practical measurement limits of the SWBS if it were normed using this sample. In addition, the skewness coefficient will be reported. The data were analyzed using SPSS for Windows Version 5.0.2

In order to test the factor structure of the SWBS in this sample, the data will be analyzed with an exploratory factor analysis procedure using Principle Axis Factoring (PAF) extraction and the Direct Obliman rotation of the extracted factors. PAF is the most recognized extraction procedure and is most commonly used because of the ability of this extraction to give a parsimonious solution (Gorsuch, 1983). Gorsuch (1983) recommends a principle factor solution (of which PAF is one) for scales with 20 or fewer items. Because the SWBS has 20 items, PAF extraction method was chosen for this analysis. Further, an oblique rotation was used to analyze the data because prior evidence has shown that the items are not completely independent of one another and therefore do not meet the criterion of being orthogonal (Paloutzian & Ellison, 1979).

CHAPTER 4

RESULTS

Skewness

The first purpose of the study was to determine if there were significant ceiling effects in the SWBS for a psychiatric inpatient sample. The first step in this process was to compare the obtained mean with the expected mean. Upon examination one notices that the obtained mean of 72.8 is very near the expected mean of 70 for the entire scale. The obtained mean for the sample was 72.8. The standard deviation was 19.9, median was 73 and range was 21 to 120. The results of the data analysis using the skewness coefficient from SPSS show the skewness reported for the entire scale to be -.081 indicating negligible amounts of negative skewness in this sample. This sample fails to show evidence of skewness and is congruent with other data which have suggested that for non-evangelical, clinical samples the scores on the SWBS tend to approximate normal distributions (Bufford, Paloutzian & Ellison, 1991). Since the sample used did not display significant ceiling effects on the SWBS, calculation of T-scores was not warranted. With a normal distribution such as in this sample simple z-scores may be used to determine standard scores.

Because of the exploratory nature of the study the entire scale was analyzed for

skewness instead of measuring the hypothesized subscale skewness coefficients. The analysis did not assume that there were two factors. Therefore the subscales were not chosen for separate analysis.

Exploratory Factor Analysis

In answering the second question which addressed the factor structure for the scale an exploratory factor analysis was performed. A Kaiser-Meyer-Olkin (KMO) measure for sampling adequacy was calculated for the sample to indicate whether the data was suitable for factor analysis. The calculated value was .89 which is suitable according to Kaiser as shown in Tinsley and Tinsley (1987) and therefore exploratory factor analysis was performed. The resulting correlation matrix is shown in Table 1.

Table 1

Correlation Matrix for SWBS Items

	SWB1	SWB2	SWB3	SWB4	SWB5
SWB1	1.0000				
SWB2	.45600	1.0000			
SWB3	.21870	.12529	1.0000		
SWB4	.08200	.15911	.35716	1.0000	
SWB5	.55583	.43419	.29176	-.01655	1.0000
SWB6	.01128	.23456	.11335	.22255	-.00002
SWB7	.18616	.06400	.57351	.38939	.14263

Table 1--Continued

SWB8	.06692	.00218	.23336	.61904	-.02721
SWB9	.64010	.48880	.26218	.16468	.63038
SWB10	.07082	.04466	.24125	.56341	-.09182
SWB11	.20685	.12650	.69366	.34527	.22393
SWB12	.26168	.37789	.11653	.22741	.27816
SWB13	.54924	.44008	.18859	.08708	.43829
SWB14	-.00058	.04986	.33444	.57993	-.07420
SWB15	.20164	.13408	.44678	.32129	.06525
SWB16	.02779	.23762	.06284	.22642	.06676
SWB17	.25678	.08348	.59104	.30603	.20017
SWB18	.38137	.53005	.13882	.17596	.38113
SWB19	.28309	.19343	.56870	.39484	.19290
SWB20	.14089	.12031	.33031	.51149	.01496

	SWB6	SWB7	SWB8	SWB9	SWB10
SWB6	1.0000				
SWB7	.12352	1.0000			
SWB8	.20305	.39568	1.0000		
SWB9	.21745	.21517	.13117	1.0000	
SWB10	.20941	.39699	.60591	.05941	1.0000
SWB11	.11730	.58260	.27126	.28253	.26822

Table 1--Continued

SWB12	.33915	.14660	.18441	.37820	.08472
SWB13	.24215	.15894	.06473	.60281	.01538
SWB14	.36339	.44882	.62434	.09686	.66027
SWB15	.10026	.55210	.37410	.22937	.38711
SWB16	.44991	.12638	.16984	.13774	.14039
SWB17	.01230	.52806	.20721	.25781	.25111
SWB18	.32933	.14491	.15016	.47815	.13452
SWB19	.15554	.53543	.35371	.27162	.40087
SWB20	.23608	.39363	.44437	.21933	.41320

	SWB11	SWB12	SWB13	SWB14	SWB15
SWB11	1.0000				
SWB12	.08742	1.0000			
SWB13	.17261	.33215	1.0000		
SWB14	.39883	.21471	.05239	1.0000	
SWB15	.53258	.14716	.11770	.44423	1.0000
SWB16	.04470	.37641	.25790	.17829	.04936
SWB17	.58570	.08083	.07955	.31098	.51954
SWB18	.16683	.57728	.40134	.17762	.16793
SWB19	.63639	.17146	.10333	.44012	.50228
SWB20	.48540	.21660	.07451	.49526	.40684

Table 1--Continued

	SWB16	SWB17	SWB18	SWB19	SWB20
SWB16	1.0000				
SWB17	-.06882	1.0000			
SWB18	.31346	.05175	1.0000		
SWB19	.14088	.65746	.20756	1.0000	
SWB20	.17911	.39919	.26985	.55712	1.0000

To determine what the factor structure was for the SWBS using a clinical sample, exploratory factor analysis was performed using principle axis factoring with a Direct Obliman rotation and results are shown in Table 2.

Table 2

Factor Structure Matrix for SWBS Using Obliman Rotation

	Factor 1	Factor 2	Factor 3	Factor 4
SWB11	.83489	.27497	.11748	-.35095
SWB19	.78892	.27582	.18903	-.47897
SWB3	.78315	.27988	.10766	-.30312
SWB17	.76824	.23386	-.06199	-.30333
SWB7	.71970	.20904	.12791	-.46608
SWB15	.64443	.20202	.10717	-.46677

Table 2--Continued

SWB20	.55813	.16662	.30768	-.54784
SWB9	.34497	.82830	.28862	-.12018
SWB1	.31835	.79700	.06253	-.06914
SWB5	.25979	.71085	.13473	.10147
SWB13	.19042	.66765	.35068	-.04265
SWB2	.14163	.61218	.39902	-.06110
SWB18	.19450	.60054	.59231	-.17354
SWB6	.11527	.15393	.63264	-.29564
SWB16	.07536	.17858	.59382	-.19917
SWB12	.17637	.46211	.58521	-.19133
SWB8	.35453	.04029	.24264	-.79625
SWB14	.49972	.03536	.38034	-.79472
SWB10	.37100	-.00318	.21224	-.78462
SWB4	.46490	.13064	.32362	-.69617

This rotation was chosen because previous research has found evidence for items being linearly dependent (Paloutzian & Ellison, 1979). Results found in Table 3 indicate moderately low correlations for each pair of factors.

Table 3

Intercorrelations Between Factors Using Obliman Rotation

Factor	1	2	3	4
1.	--			
2.	.31	--		
3.	.12	.32	--	
4.	-.48	-.03	-.32	--

A comparison between orthogonal and oblique rotations shows little significant difference in factor structure and because the factors appear to be correlated the oblique rotation was retained. Three meaningful factors with Eigenvalues greater than 1.00 emerged (see Table 4), accounting for 52.0% of the overall variance.

Table 4

Factors and Eigenvalues for SWBS

Factor	Eigenvalue	%of Variance	Cumulative %
1	5.98436	29.9	29.9
2	2.73308	13.7	43.6
3	1.67357	8.4	52.0
4	.61448	3.1	55.0

Appendix 1 contains the items as they were rotated out of the oblique factor

solution. Factor 1, named "Affiliation" contained 7 items including 'God is concerned about my problems', reporting having, 'A personally meaningful relationship with God' and, 'My relation with God contributes to my sense of well-being.' There was one item (#20) that loaded onto this factor which pointed toward purpose in life. However, the construct being measured by this factor is affiliational and relational aspects of the individual's relationship with God. This means the individual feels as though they are loved and cared for by God and relate to God in a positive way.

Factor 2, labeled "Alienation," consisted of a total of six items of which two suggested a theme of dissatisfaction with life in general and the remaining four items indicating the theme of distance from God. Examples of items found on this factor include, "I don't get much personal strength and support from my God," and "I don't have a personally meaningful relationship with God." The construct being tapped by this factor is most represented by distance between the individual and God.

Factor three (3 items) was labeled "Dissatisfaction with Life" and was characterized by salient loadings on this factor by items including: 'I feel unsettled about my future', 'life is full of conflict and unhappiness' and 'I don't enjoy much about life.' These items, originally used by Paloutzian and Ellison (1979) to measure existential aspects of peoples lives held together on this factor to measure negative aspects of life.

When examining the factor loadings in Table 2 for each of the items on the first three factors, complexity is encountered with a number of the items. Particularly item #18, which loaded highest on factor 2 by only .008. In order to keep the constructs each of these two factors are measuring as clear as possible item #18 would more appropriately

be placed in factor 3. Item number 20 also showed some level of factorial complexity, loading almost equally onto factor 1 as on factor 4 (Eigenvalue <1 and therefore not retained). Theoretically this item would more appropriately be left off from the scale due to its incongruity with the items that comprise factor 1. Overall the solution afforded by the Obliman rotation gives a clear factor structure of three distinct subscales tapping three factors with the minimum of factorial complexity.

The purpose of this study was to examine the SWBS for significant ceiling effects in a clinical sample. No significant ceiling effects were found when the SWBS was administered to a sample of psychiatric inpatients. The second purpose of the study was to examine the SWBS to determine its factor structure. This was done using an exploratory factor analysis with an oblique rotation rather than an orthogonal rotation. The results of this factor analytic study show that there are three factors the items from the Spiritual Well-Being Scale are tapping. The three factors that were rotated out of the pool of items included, "Affiliation", "Alienation" and "Unsatisfied with Life." These factors are quite distinct from Paloutzian & Ellison's (1979) factor solution in which the items containing religious references were contained in the first factor and the Existential items were broken into an additional factor. In this analysis the items that contain religious reference are broken into two distinct factors while the existential theme is abbreviated into one factor with only three items.

CHAPTER 5

DISCUSSION

The purpose of the study was twofold. The first was to examine the scale for ceiling effects in a clinical sample. The second purpose was to examine the factor structure of the SWBS.

Techniques used to analyze the data for skewness and ceiling effects revealed that in clinical samples the data are normally distributed. This is consistent with other findings for clinical samples (Bufford, Paloutzian & Ellison, 1991; Agnor, 1988). One of the main purposes of doing analysis with ceiling effects and checking the nature of the sampling distribution is to determine with which populations the scale can be appropriately used. It has been shown in the past that this scale, if used with individuals from evangelical Christian samples, could not accurately detect spiritual health because of ceiling effects. In these particular samples, the scale was only able to measure one standard deviation above the mean. In the same samples the scale could measure four standard deviations below the mean and therefore was much more accurate at measuring low levels of spiritual well-being. This led researchers to claim that the scale should more appropriately be used as a screening device to determine those individuals lacking overall spiritual well-being (Ledbetter et. al, 1991a). The purpose of this study was to examine the characteristics of the scale with clinical samples and determine if the scale could be used without evidence of

ceiling effects. The current analysis gives evidence that for clinical samples the scale shows little evidence of giving skewed results or demonstrating ceiling effects.

The second major purpose of this study was to examine the scale to determine an appropriate factor structure, thus helping to determine which constructs were being tapped by the items of the scale. The factor structure suggested for the Spiritual Well-Being Scale in this analysis with a clinical sample is different than what was originally hypothesized by the scale's authors. The current analysis shows that the scale consists of three distinct factors that are being tapped instead of two. The first factor was labeled "Affiliation" as it relates to God. The second factor seems to be tapping a feeling of alienation individuals are feeling toward God. These first two factors do not suggest two ends of the same continuum, but rather two distinct factors and subscales. Evidence for this can be seen in Table 3. If the scales were polar opposites of one another, a negative correlation would be expected. Since a positive correlation exists one could conclude that these are distinct factors. Further evidence is found in Table 2 in which the factor loadings are listed. If these were two ends of the same continuum items in factor one would load negatively on factor two and items in factor two would load negatively on factor one. This is not the case. We can conclude that the factor structure is different from that originally hypothesized by the authors.

Where do the above results leave us in terms of clinical utility? One of the criticisms raised by this study is the issue of appropriate use of this scale with a wide variety of samples and populations. It has been noted that this scale has been used primarily with religious samples to measure overall spiritual well-being. Now the evidence

from this study shows that it can be appropriate to use with clinical samples to measure an individual's attributions and feelings toward God. The psychometric qualities of the new scale, if replicated with other samples, would yield a scale that would give more accurate reliability and validity coefficients. Further, its ability to conform to a normal distribution will make data collected by the scale more interpretable and accurate in both correlational studies and regression analyses. This had not been the case with the SWBS. Overall, this is a shorter, clearer and appears to be a more psychometrically sound instrument displaying initial signs of construct and content validity.

Though the initial results of this study indicate a scale that measures both feelings of alienation and affiliation with God, some limitations of the study warrant some caution on the part of clinicians and researchers when using the scale. Limits of the current study include lack of a confirmatory factor analysis to validate the results of this study. Further work still needs to be done to determine if the new scale has respective reliability coefficients to warrant its use with wide varieties of clinical samples other than psychiatric patients. Construct validity has been initially addressed through the factor analysis, however other sources of validity evidence for the new scale are still necessary. Studies utilizing other scales that tap aspects of the individual's relationship with God would be helpful to confirm content validity.

As was noted earlier, Table 3 contains the intercorrelations of the factors which suggest a slight correlation between the first two factors. Though the correlations are not high they do suggest a moderate relationship. Those individuals that endorse statements about having a close relationship with God also endorse statements that show they may

feel alienated from God. This phenomena has not been reported in previous samples when using this scale. Further research with this instrument to explore the nature of this seemingly contradictory state is necessary.

Further study is needed to determine how this scale can be used effectively in therapy and treatment for psychiatric inpatients. For example, do individuals that endorse the alienation items also experience alienation from others around them? Does the relationship that people have with God give them a significant source of strength and comfort while being treated for a mental illness? What implications does this have for therapists not taking this resource into account? What power may we be overlooking in treatment with religious individuals by not acknowledging their experience with God? The clinical utility of this scale could help to answer some of these and other important questions.

APPENDIX 1

FACTOR STRUCTURE FOR INPATIENTS

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Factor 1: Affiliation

11. I believe that God is concerned about my problems.

19. My relation with God contributes to my sense of well-being.

3. I believe that God loves me and cares about me.

17. I feel most fulfilled when I'm in close communion with God.

7. I have a personally meaningful relationship with God.

15. My relationship with God helps me not to feel lonely.

20. I believe there is some real purpose for my life.

Factor 2: Allienation

9. I don't get much personal strength and support from my God.

1. I don't find much satisfaction in private prayer with God.

5. I believe that God is impersonal and not interested in my daily situations.

13. I don't have a personally satisfying relationship with God.

2. I don't know who I am, where I came from, or where I'm going.

18. Life doesn't have much meaning.

Factor 3: Dissatisfaction with Life

6. I feel unsettled about my future.

16. I feel that life is full of conflict and unhappiness.

12. I don't enjoy much about life.

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VITA

I am currently enrolled as a first year student in a Ph.D. program in Clinical Psychology at Bowling Green State University in Bowling Green, Ohio. I currently hold a number of memberships in professional organizations including Student Affiliate of the American Psychological Association (APA), a Student Affiliate of Division 36 of the APA, and a Student Affiliate of Division 30 of the APA.

My most recent professional position included work as a practicum student at Rush-Presbyterian St. Luke's Medical Center in Chicago as part of a Masters in Community Counseling from Loyola University Chicago. My duties included conducting outpatient individual psychotherapy, family therapy, and co-leading guided imagery groups for psychiatric inpatients. I performed Spiritual Assessments with psychiatric in-patients that requested chaplaincy services in the hospital and coordinated spiritual care plans with the rest of the patient's health care team. In addition, I attended patient care conferences with the attending psychiatrists and primary care nurses. Finally, I was responsible for teacher assisting a class entitled, "Issues in Counseling" for third year audiology nursing majors in the medical center.

Between 1994 and 1996 I was a member of a research team conducting a longitudinal study examining the association between religion and depression. I was responsible for all data collection, including initial interviews and follow-ups, with study

subjects (psychiatric in- and out- patients), and for maintaining all study records. Part of my duties included establishing inter-departmental connections necessary to support data collection. I was involved in the computer work and assisted in writing and editing data entry computer programs for the study. I began initial data analysis. Other duties included researching grant and foundation support for the research program. Additionally, I was involved in editing and proofreading faculty manuscripts and grant proposals for others in the department of Religion, Health and Human Values.

While attending Trinity Christian College during my Junior and Senior years I functioned as the primary researcher on a project investigating the phenomenon of learned helplessness as seen in humans. I developed and implemented a new approach to studying learned helplessness in humans utilizing two paradigms of research- both a quantitative method and a phenomenological interview with research participants.

THESIS APPROVAL SHEET

The Thesis submitted by Eric L. Scott has been read and approved by the following committee:

Albert Agresti, S.J., Ph.D., Director
Associate Professor, Counseling Psychology
Loyola University Chicago

George Fitchett, D.Min.
Associate Professor and Director of Research and Spiritual Assessment,
Department of Religion, Health and Human Values,
Rush-Presbyterian-St. Luke's Medical Center

The final copies have been examined by the director of the Thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the Thesis is now given final approval by the committee with reference to content and form.

The Thesis is, therefore, accepted in partial fulfillment of the requirements for the degree of Master of Arts.

December 2, 1996
Date

Director's Signature